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PROMOTE PROTECT PROSPER
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Date September 28, 2000

SUBJ Evaluation of the USATC and Fort Jackson's status under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
EPA I D Number SC3 210 020 449

FROM Stacey French

TO David Scaturo

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the USATC and Fort Jackson's status in relation to the following corrective action event codes defined in the Resource Conservation and Recovery Information System (RCRIS)

1) Current Human Exposures Under Control (CA725),

2) Migration of Contaminated Groundwater Under Control (CA750)

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the second evaluation for USATC and Fort Jackson's The previous evaluation resulted in a determination of NO for CA725 and NO for CA750 The evaluation was based on Phase I RFI and CS reports Since then, the USATC and Fort Jackson has instituted Interim Measures to remove contamination at SWMUs 30, 47 and 48, has posted signs at SWMUs 2, 6, 14, 21, and 38 , and has secured SWMUs 14, 20, 23, 39, 40, 47 and AOC B with locked gates The USATC and Fort Jackson has completed all follow on actions outlined in the EI memorandum dated May 28, 1998

III. FACILITY SUMMARY

The USATC and Fort Jackson lies within the city of Columbia, Richland County, South Carolina, near the center of the state The installation occupies approximately 53,000 acres and consists of a cantonment area, mobilization buildings, weapons ranges, and bivouac and maneuver areas The cantonment area, which is located in the south western portion of the installation, is the location of the majority of the facility housing, administrative buildings, and industrial operations Outside the cantonment area, the

installation is mostly covered by moderate to dense woods Former and current activities at the USATC and Fort Jackson include vehicle maintenance, explosive ordnance disposal (EOD), weapon cleaning. fabrication of fiberglass and plastics. periodic barracks construction and demolition, and the use of weapon and munitions ranges

The USATC and Fort Jackson lies within the Sand Hills of the Upper Coastal Plains physiographic province and has gently rolling topography Elevations range from approximately 200 to 500 feet above mean seal level Five separate watersheds receive surface runoff from the USATC and Fort Jackson The subsurface material consists of interbedded layers of fine to coarse sands, silts. sandy clays, and clays Perched water table conditions exist at many places in the vicinity of the USATC and Fort Jackson Groundwater generally flows parallel to the surface topography towards surface water bodies and drainage features

The regulated unit, a hazardous waste storage facility, is a 1,024 square foot building used to temporarily store containerized hazardous wastes, which are listed in the facility Hazardous Waste Management Permit The hazardous waste storage facility is located within the fenced and secured area of the Defense Reutilization and Marketing (DRMO) compound, in the southwest portion of the installation

IV. CONCLUSION FOR CA725

As explained in Attachment 1, because human exposures to contamination are currently controlled for soil, groundwater, and surface water, it is recommended that CA725 YE be entered into RCRIS

V. CONCLUSION FOR CA750

As explained in Attachment 1, because migration of groundwater contamination is controlled, it is recommended that CA750 YE be entered into RCRIS

VI. SUMMARY OF FOLLOW-UP ACTIONS

Because a determination of CA725 YE and CA750 YE have been made, there are no follow up actions required at this time

Attachments
1 CA725 Current Human Exposures Under Control
2 CA750 Migration of Contaminated Groundwater Under Control

ATTACHMENT 1
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA725)
Current Human Exposures Under Control

Facility Name: The USATC and Fort Jackson
Facility Address: Fort Jackson, South Carolina 29207
Facility EPA ID #: SC3 210 020 449

1 Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e g , from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

__X__ If yes - check here and continue with #2 below,

____ If no - re-evaluate existing data, or

____ If data are not available skip to #6 and enter"IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e g , reports received and approved, etc) to track changes in the quality of the environment The two EI developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater An EI for non-human (ecological) receptors is intended to be developed in the future

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i e , contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i e , site-wide))

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA) The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i e , potential future human exposure scenarios, future land and groundwater uses, and ecological receptors)

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i e , RCRIS status codes must be changed when the regulatory authorities become aware of contrary information)

2 Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards guidelines guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			organics, inorganics, metals, and petroleum hydrocarbons (TPH)
Air (indoors)[2]		X		
Surface Soil (e g , <2 ft)	X			PCBs, organics, inorganics, pesticides, TPH
Surface Water		X		
Sediment		X		
Subsurface Soil (e g , >2 ft)	X			PCBs, organics, inorganics, pesticides, TPH
Air (outdoors)		X		

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded

____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation

____ If unknown (for any media) - skip to #6 and enter "IN" status code

Rationale and Reference(s)
RFI Report SWMUs 6,20,21,23,30,and 48
Final CS Report SWMUs 5, 11, 18, 19, 24, 27, 29, 31, 32, 33, 35, 38, 39, 40, and AOC C
Draft Supplemental CS Report SWMUs 39 and 40
Interim Measure Work Plan SWMU 48
Interim Measure Work Plan SWMU 47
Phase III RFI Report SWMU 14 and AOC B

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[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range)

[2] Recent evidence (from the Colorado Dept of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks

3 Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table Potential **Human Receptors** (Under Current Conditions)							
"Contaminated" Media	**Residents**	**Workers**	**Day-Care**	**Construction**	**Trespassers**	**Recreation**	**Food**[3]
Groundwater	No	No	No	No	No	No	No
Air (indoors)	No	No	No	No	No	No	No
Soil (surface, e g , <2 ft)	No	No	No	No	No	No	No
Surface Water	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Sediment	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Soil (subsurface, e g , >2 ft)	No	No	No	No	No	No	No
Air(outdoors)	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Instructions for Summary Exposure Pathway Evaluation Table

1 For Media which are not "contaminated" as identified in #2, please strike-out specific Media, including Human Receptors' spaces, or enter "N/C" for not contaminated

2 Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway)

Note In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have assigned spaces in the above table While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary

__X__ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e g , use optional Pathway Evaluation Work Sheet to analyze major pathways)

____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

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[3] Indirect Pathway/Receptor (e g , vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc)

Rationale and Reference(s) IMs were completed to remove contaminated soil at SWMUs 47 and 30 and Ims were installed to remove contaminated groundwater at SWMUs 30 and AOC B Signs were posted at SWMUs 2,6,14,21,and 38 restricting access SWMUs 14,20,23,39,40,47, and AOC B are secured with a locked gate and signs are posted restricing entrance to authorized personell The authorized personell are kept informed of the investigation and remediation activities ongoing at the sites and are aware that they are not to interfere with the SWMUs They are continuing to investigate all sites to determine if the controls are adequate and what remedial actions are required In addition to other controls, the base is surrounded by a base boundary fence with signs posted identifying the property as an army installation to deter trespassers

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i e , potentially "unacceptable" because exposures can be reasonably expected to be 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"), or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

____ If no (exposures can not be reasonably expected to be significant (i e , potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant "

____ If yes (exposures could be reasonably expected to be "significant" (i e , potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant "

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s) _____

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5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e g , a site-specific Human Health Risk Assessment)

____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

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[4] If there is any question on whether the identified exposures are "significant" (i e , potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience

Rationale and Reference(s) _____

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility)

__X__ YE - Yes, "Current Human Exposures Under Control" has been verified Based on a review of the information contained in this EI Determination, "Current Human Exposures[5] are expected to be "Under Control" at the USATC and Fort Jackson facility, EPA ID #SC3 210 020 449, located at Fort Jackson, South Carolina 29207 under current and reasonably expected conditions This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility

____ NO - "Current Human Exposures" are NOT "Under Control "

____ IN - More information is needed to make a determination

Completed by (signature) Stacey French Date 9/29/00
(print) Stacey French
(title) Environmental Engineer Associate

Supervisor (signature) David Scaturo Date 9/29/00
(print) David Scaturo, P E , P G
(title) Manager
(EPA Region or State) South Carolina

Locations where References may be found

South Carolina Department of Health and Environmental Control, Columbia South Carolina
USATC and Fort Jackson, 2563 Essayons Way, Fort Jackson, South Carolina 29207-5670

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[5] FINAL NOTE THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK

ATTACHMENT 2
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name. The USATC and Fort Jackson
Facility Address: Fort Jackson, South Carolina 29207
Facility EPA ID # SC3 210 020 449

1 Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e g , from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

__X__ If yes - check here and continue with #2 below,

_____ If no - re-evaluate existing data, or

_____ If data are not available, skip to #8 and enter"IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e g . reports received and approved etc) to track changes in the quality of the environment The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater An EI for non-human (ecological) receptors is intended to be developed in the future

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i e , site-wide))

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA) The Migration of Contaminated Groundwater Under Control EI pertains ONLY to the physical migration (i e , further spread) of contaminated ground water and contaminants within groundwater (e g , non-aqueous phase liquids or NAPLs) Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i e , RCRIS status codes must be changed when the regulatory authorities become aware of contrary information)

2 Is **groundwater** known or reasonably suspected to be **"contaminated"**[6] above appropriately protective "levels" (i e , applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation

____ If no - skip to #8 and enter 'YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated "

____ If unknown - skip to #8 and enter "IN" status code

Rationale and Reference(s)
Interim Measure Work Plan SWMU 47
Phase III RFI Report SWMU 14 and AOC B

Rationale:
Investigations performed to date have demonstrated the presence of contaminants in groundwater at concentrations exceeding applicable standards SWMU 14 is a former weapons cleaning area Operations at SWMU 14 utilized compounds such as trichloroethylene (TCE) and sodium dichromate (hexavalent chrome) Investigations conducted to date have indicated the presence of TCE at levels exceeding its maximum contaminant level (MCL), 5 ug/L The maximum detected concentration of TCE during the most recent sampling event was 960 ug/L The highest detected concentration of 1,2-trans dichlorethylene (DCE) during this event was 500 ug/L, exceeding its MCL of 100 ug/L

Groundwater at SWMU 47 is impacted by petroleum hydrocarbons Chromium and lead have also been detected at SWMU 47 at levels exceeding their MCLs The maximum detected levels of chromium and lead during the 1997 RFI were 250 and 170 ug/L, respectively, which exceeded the MCL of 100 ug/L for chromium and the action level of 15 ug/L for lead

3 Has the **migration** of contaminated groundwater **stabilized** such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[6] as defined by the monitoring locations designated at the time of this determination?

__X__ If yes - continue, after presenting or referencing the physical evidence (e g , groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[6])

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[7]) - skip to #8 and enter

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6 "Contamination" and ' contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses)

7 "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify

"NO" status code after providing an explanation

____ If unknown - skip to #8 and enter "IN" status code

Rationale and Reference(s) Investigations to date have detected the presence of contamination at several sites, however contaminant concentrations and distribution have not indicated the migration of contaminated groundwater at most sites

SWMU 14 is a former weapons cleaning area which discharged TCE and hexavalent chromium to the environment. Several rounds of investigation have demonstrated the presence of TCE in soils and groundwater. Recent data (SWMU 14 / AOCB Phase 3 RFI Report) have documented a significant reduction of TCE levels, from a maximum detection of 3,900 ug/L in 1991, to 960 ug/L for the same location in 1998. Similar reductions are reported for other wells, and a sufficient number of wells exist to demonstrate that the plume is not migrating laterally or vertically. Additional investigation and monitoring are anticipated to ensure that the contaminant plume at SWMU 14 is shrinking.

SWMU 47 has been addressed by an interim measure designed to remove known or suspected contaminant sources which could contribute to the migration of contaminated groundwater.

4 Does "contaminated" groundwater **discharge** into **surface water** bodies?

____ If yes - continue after identifying potentially affected surface water bodies

__X__ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies

____ If unknown - skip to #8 and enter "IN" status code

Rationale and Reference(s) Groundwater contamination at SWMU 14 was previously believed to discharge to surface water in Wildcat Creek. Surface water sampling conducted during the 1998 Phase 3 RFI has demonstrated that contaminants released at SWMU 14 are not present at detectable concentrations within Wildcat Creek. Additional surface water and sediment sampling is scheduled to confirm the original data. Surface water monitoring may be required to ensure that Wildcat Creek is not impacted in the future.

Surface water analytical results for SWMU 47 from the October 1997 RFI indicate that contaminated groundwater is not impacting surface water.

5 Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i e , the maximum concentration[7] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e g , the nature and number of discharging contaminants, or environmental setting) which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting 1) the maximum known or reasonably suspected concentration[7] of key contaminants discharged

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that all "contaminated" groundwater remains within this area, and that the further migration of 'contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i e , including public participation) allowing a limited area for natural attenuation

above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing, and 2) providing a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system

____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting 1) the maximum known or reasonably suspected concentration[7] of <u>each</u> contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing, and 2) for any contaminants discharging into surface water in concentrations[8] greater than 100 times their appropriate groundwater "levels," providing the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identifying if there is evidence that the amount of discharging contaminants is increasing

____ If unknown - enter "IN" status code in #8

Rationale and Reference(s) _____

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6 Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i e , not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[9])?

____ If yes - continue after either 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater, OR
2) providing or referencing an interim-assessment,[10] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment

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8 As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e g , hyporheic) zone

9 Note, because areas of inflowing groundwater can be critical habitats (e g , nurseries or thermal refugia) for many species, appropriate specialist (e g , ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies

10 The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems

"levels," as well as any other factors, such as effects on ecological receptors (e g , via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination

____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems

____ If unknown - skip to 8 and enter "IN" status code

Rationale and Reference(s) _____

7 Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_X_ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination "

____ If no - enter "NO" status code in #8

____ If unknown - enter "IN" status code in #8

Rationale and Reference(s) SWMU 14 is presently under continuing investigation A Phase 3 RFI Report was submitted in September 1999 Recommendations in the Phase 3 RFI Report include additional groundwater investigation down-gradient of Wildcat Creek, and additional surface water and sediment sampling If this data confirms the conclusions of the Phase 3 RFI, a CMS will be produced in order to proceed to final remedy selection Monitored natural attenuation (MNA) is a likely remedy based on site history The selected remedy will be required to incorporate monitoring of groundwater and surface water to demonstrate that the contaminant plume is not migrating or significantly impacting surface water

SWMU 47 are scheduled to undergo Phase 2 RFIs once interim measures have been completed for these sites This investigation will be conducted in order to verify effectiveness of the IM and to determine the need for continued monitoring In the event that groundwater remains contaminated above appropriately protective risk based levels, further action will be required which will include groundwater monitoring at a minimum

8 Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750) and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility)

__X__ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the USATC and Fort Jackson facility, EPA ID #SC3 210 020 449, located at Fort Jackson, South Carolina 29207 Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility

____ NO - Unacceptable migration of contaminated groundwater is observed or expected

____ IN - More information is needed to make a determination

Completed by(signature) Stacey French Date 9/29/00
(print) Stacey French
(title) Environmental Engineer Associate

Supervisor (signature) David Scaturo Date 9/29/00
(print) David Scaturo, P E , P G
(title) Manager
(EPA Region or State) South Carolina

Locations where References may be found

South Carolina Department of Health and Environmental Control, Columbia South Carolina
USATC and Fort Jackson, 2563 Essayons Way, Fort Jackson, South Carolina 29207-5670

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